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ABSTRACT

The exploratory and secondary phases of the "Organisation for Economic Cooperation and Development (OECD) project to develop a set of international indicators based on comparable educational data is described in this report. Voluntary networks in 24 OECD member countries are developing a cohesive conceptual framework based on a review of educational models to expand the interpretive values of the set of indicators. Questionnaires based on the International Standard Classification of Education (ISCED) were used to collect data and to transform international educational statistics into a set of comparable indicators. A simple model was developed, due to a lack of consensus on educational models, the diversity and partiality of approaches, and differences between political structures and national policies. The goal of phase two is the expansion and refinement of the model and delineation of 20 to 30 indicators calculated on a comparable basis for most OECD member countries. Definitional problems and considerations of national cultural and political contexts are remaining procedural constraints. (LMI)

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PRESENTATION PREPARED FOR THE AERA 1990 CONFERENCE

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BACKGROUND AND RATIONALE OF THE CONCEPTUAL FRAME

THE OECD/CERI INTERNATIONAL EDUCATIONAL INDICATORS PROJECT

A brief presentation

There is a growing interest in educational indicators at the international level. Since the beginning of the 1980s, international comparative studies of educational outcomes tend to go beyond their usual audience of researchers and elicit the active interest of policy-makers and the public at large. This changing attitude results in increasing attention paid by national authorities in Western industrialised countries not only to the evaluation of their own educational systems and of their performance, but also to the comparison of educational achievements.

This trend differs from the more academic IEA programs in that it evolves from a policy-makers' demand. Education is increasingly seen on their part as a priority strongly related to the needs of economic competition and the growing role attributed to human capital. This view of education clearly entails the need for a better understanding of the processes at work within education systems, in order to better monitor them, set priorities and discharge increased demands for accountability. Indicators are part of the information system necessary to that end.

Given this changing context, it was only natural for the Organization for Economic Cooperation and Development to become more actively involved in educational indicators' work at the international level. The OECD -- an intergovernmental organisation created in 1960 to help promote economic cooperation and foster development and growth -- has 24 Member countries including European and Scandinavian countries as well as the United States, Canada, Australia, New Zealand and Japan. The OECD is not a supranational organisation and as such has no decision-making power; it is primarily a center for discussion where governments express their points of view, share their experiences and search for common ground.

The OECD's main concern is economics and macro-economic policies. The analyses and projections it develops require databanks and high level expertise in econometrics. These characteristics have helped the Organization apply the expertise developed for economic indicators to science and technology. A significant part of OECD work deals with the social policies sphere, and includes the observation and analysis of broad trends in education policies and reforms and the collection of statistics on education systems. CERI -- a Center for Educational Research and Innovation which is part of the OECD -- addresses more specifically areas of innovations in educational research and teaching practices such as human resources, multiculturalism, and the use of new technologies in the classrooms.

The OECD sponsored two international Conferences on educational indicators and related issues between November, 1987 and March, 1988. The first, held in Washington, DC, and hosted by the American authorities, focused on performance indicators. The French Ministry of Education initiated the second and chose to highlight the respective relations of evaluation and indicators. On the basis of these discussions a proposal to develop international educational indicators was presented to the CERI Governing Board at its May, 1988, meeting. The Board endorsed the project with its organisational arrangements and plan of work for an exploratory phase of 18 months (mid-1988 to end 1989). It gave the exploratory phase mandate to test the interest in, and feasibility of, developing international educational indicators based on comparable educational statistics and data.

Participants and work structure.

Some 200 people are currently involved in the international aspects of the work and the Project is now well into its second phase. Phase 2 will build on the results of the exploratory phase to produce a refined set of indicators and strengthen its conceptual foundations.

Participants in the 24 Member countries include high-level policy makers and civil servants generally charged with developing, evaluating and reforming educational policies. They also include researchers working notably on school evaluation or student assessment as well as specialists of educational data and information systems. In many cases, these participants work with national reference groups and these further broaden the expertise-base available to the Project.

In order to help these very diverse groups function best together the Project is structured around Networks of volunteer countries, with each Network chaired by a lead country. Each Network has been assigned a specific domain for development, and from the very beginning of the Project, the domains of interest were defined according to priorities expressed by participants. Each country was free to join one or more Networks depending on its interests, experience, or its priorities in education policy.

The six areas chosen for further work during the next two years include such difficult but relatively traditional domains as student cognitive outcomes, better mapped ones such as costs and student flows, or more innovative ones such as labor market insertion, features of schools or even measurement of attitudes and expectations.

TWO OBJECTIVE CONSTRAINTS IN DEVELOPING A CONCEPTUAL FRAME

This brief presentation of the work structure and organisation of the Project readily highlights the main constraints and features which contribute to the need for a conceptual frame designed to help bring the outcomes of the work together.

The chosen working structure

The major constraint is that which comes from a devolved Network structure implying great freedom in defining the content of domains and outcomes. Amplifying this is the fact

that we work with volunteers, with countries willing to devote financial and human resources to an endeavor which lacks immediate benefits, apart from sharing information and concerns and getting access to a pool of international expertise.

It is difficult in such cases to be mandatory, especially during exploratory work. A voluntary lack of clear guidelines during the exploratory phase resulted in a fireworks of ideas and a list of some 180 potential indicators. The difficulty of course then lied in drawing all these elements together at the end, and only a common frame can make it possible.

A mixed audience

Our first group -- policy-makers -- needs indicators that are effective instruments for policy decisions. They require indicators to help them monitor the quality of education and obtain information on the range of policy options available. In other words, they need indicators geared for action and useful.

Our second group -- the research community -- looks at indicators from a different perspective. They are interested in improving the analysis and understanding of education systems. The scientific validity and reliability of indicators come first and foremost and their usefulness for decision-making is subordinated to them. But there then is a risk of seeing an excessive wish for validity result in a lack of positive outcomes. In some ways, this lack of relevance to policy-makers might have contributed to the failure of some previous international indicators programs.

THE INES CONCEPTUAL FRAME

What is a conceptual frame ?

Given those constraints, we recognised from the outset of our work the importance of a strong conceptual framework to ensure the Project took a coherent approach to indicator development and also safeguard against the potential misuse of indicators.

What we call for ease of reference a conceptual frame is really two things: it is a series of principles designed to guide the work of the Project and to ensure that all our indicators share the same key characteristics. It is also a simple model of education which mainly serves to guide the selection of indicators and to ensure that no major domains goes unrepresented or unaccounted for. These elements are presented in a paper drafted for the Project, and it should be stressed at this stage that our "conceptual frame" has been designed as first and foremost an operational one, an organising frame common to all groups cooperating within the Project.

A paper commissioned for the Project reviews models of education explicit or implicit in previous research on education and health indicators. This work shows that there are almost as many models developed as there are indicators projects. We are certainly in no position to say that our frame is all you will ever need to know about conceptualising education. This is not our aim. More modestly we attempted to develop a meaningful frame to use within our Project, taking into account its specificities and notably the need for international comparability and for comprehensiveness of coverage.

An interactive indicator set

Indicators sometime address relatively simple concepts which are directly measurable. More abstract concepts such as efficiency or productivity may however require more complex indicators, sometimes called composite or compound indicators. These have the advantage of compacting and articulating in one concept several aspects of the educational system, thus enabling the researcher to combine simplicity of description with the conceptual validity that only a multivariate approach of the system can provide.

Given the complexity and the diversity of educational systems, it is obvious that individual and isolated indicators, and even compound indicators, can only convey limited information. It is therefore essential to build a coherent system of indicators that clearly reflects the state of an education system. Such a system cannot simply comprise a collection of basic statistical data, however easily accessible such data may be. Indicators that are devised without a clear overall concept and without a common frame of reference are likely to produce a jumble of disconnected facts and figures. We must avoid our work resulting in a bunch of some twenty or thirty interesting and comparable but unrelated variables.

Building a coherent system or set of indicators is a way to compensate for the unidimensional nature of each indicator and to change an ad hoc collection of statistics into a valid representation of the overall condition of a particular education system. To provide this picture, the selected indicators should be connected in a logical way, and these linkages should proceed from a model that describes how the education system works. Refering to a model permits a broader assessement of an indicator's relevance; it is a crucial prerequisite to proper and valid interpretation and use of indicators.

The key role of a conceptual frame is therefore to expand the interpretative value of the set of indicators we will develop. Ideally, such a frame will help us understand how individual components of the set work together to achieve a given effect. We are interested in the interactions, the relations that can be observed. In a way, we are interested in the arrows as much as in the points they stem from or lead to. We are for example interested in the way labor market insertion indicators and achievement indicators can help policy-makers put into perspective educational spending and cost indicators. The set can thus be used to assess current conditions, appreciate the likely effects of changes in policy and provide clues about what is wrong and what changes might lead to improvement.

An educational indicator, then, or rather a set of educational indicators, tells something about the performance or behavior of education systems and as such can be used to inform educational decision-making. But in the same way as not all indicators are equal, not all educational statistics qualify as indicators.

Transforming basic national educational statistics into a set of internationally comparable indicators is a complicated process. The Project and the Networks benefited in this respect from the joint questionnaire that the OECD, UNESCO and the EC use for the collection of educational statistics. Even this instrument is however far from solving all the definitional problems involved in ensuring comparability of the data. The questionnaires are based on an internationally agreed-upon classification of education called ISCED -- International Standard Classification of Education. ISCED was elaborated over a 20 year period, adopted in 1978 and used for the first time in 1983.

While the existence of ISCED is a major step in international cooperation and harmonisation of data collection in education, many problems still remain unsolved. Chief among these is the fact that ISCED is a classification of programs of study grouped by level and type of education. As a consequence, it is difficult to derive from it information on teaching staff and expenditure and relate it to pupils and courses. It should also be noted that the 20 years it took to develop ISCED experienced many major changes in education policies and structures which are not reflected in the definitions finally agreed upon and used.

Even where ISCED exists and can be used, definitional problems remain with respect to the comparability of data. Agreeing on the importance of an indicator such as pupil/teacher ratio, for instance, raises many questions as to what, exactly, is a teacher: part-time teachers have to be accounted for, teachers' assistants should either be considered as teachers or not, but this must be done consistently, etc. And how is "secondary school completion" to be defined for countries with a final exam which part of the students can fail? Are all student presented to be included, or just those who pass? These are relatively simple questions, and achievement indicators raise even more complex ones.

One of the clear conclusions emerging from our exploratory work is that the Project will in the future need to devote even more time and attention to these apparently technical but determining questions.

Why such a simple model?

Many possible models exist, but the review paper prepared for the Project highlighted the lack of consensus on modelling education, the diversity and partiality of approaches as well as the common themes. It seems that the limitations of these models stem mainly from their lack of comprehensiveness. They often tend to concentrate on only one dimension of education -- economics, human resources, finances or outcomes -- to the detriment of the global articulation of relations within the system. Nevertheless, they are interesting and provide a very useful stock which one can draw upon.

The choice of a suitable model is particularly difficult for international work since educational policies, institutions and procedures vary from country to country, as do evaluation and indicator policies, in terms of priorities as much as in terms of instruments. For example, although federal states share very much the same concerns as centralized ones, their political and institutional structures lead them to generally approach evaluation and accountability with a different perspective. In particular, the notion of regional level comparison -- i.e. State, province, German Länder ... -- is a key issue, and one that is not always well accepted. Federal states also often seem to pay a greater attention to the publication and dissemination of results and information. Even where priorities are similar, methods and uses of the results may widely differ: this is the case in the student achievement domain.

Fundamental similarities however do exist, particularly within OECD member countries and make it possible to use simple models of general applicability such as an input/process/output one. Of course, such a frame does not really achieve the objectives indicated above as desirable -- increase the interpretative value -- and needs to be refined and elaborated. One such elaboration was attempted, but many others are possible and this is for us an area for further major work.

Starting off with a simple base enabled us to commence the work and have the groups explore and delineate their domains. Given our time frame -- we had 18 months to prove the feasibility of the Project to our Governing Board -- it made little sense to spend too long on the conceptual issues if that meant holding up the rest of the work. This explains our choice of working in parallel and our acceptation of very modest results on that aspect.

Where to now? perspectives for phase 2

Reluctancies are still expressed over the development of objective measures of the functioning of education systems that can be used to assess relative progress but also to compare systems' performance: at stake is the fear that unfair comparisons could generate international league tables. Basing a system of indicators on an agreed-upon model of education which provides a reference framework for analysis and interpretation is one of the ways through which these reluctancies can be overcome.

It is as yet too early to forecast what we will achieve in this phase. It seems reasonable to assume that we will be able to expand and refine our model, delineate a set of twenty to thirty indicators calculated on a comparable basis for most OECD Member countries and report on these. Whether or not we will be able to run data through the model is still an open question and current lack of comparable and reliable data might prevent it .

It is clear that one of our major tasks for this phase will be to sharply refine the model to achieve a greater interpretative value. This notably implies accounting in the model for important elements which are currently missing such as school level indicators, or attitude ones. It also means that we will strive to develop a more dynamic model, one that is able to describe for instance how resources are allocated to education and to specific programs, and how this allocation can be related to processes.

It means that we need to pay the greatest attention to the interpretation of the information and indicators we will report, and that we need to stress the importance of understanding the national contexts of the systems we compare. Contexts include culture, history and values as much as structures and policies. They also include a careful analysis of how the realities of the process taking place within the formal structure can shape a "real" organisational chart of power allocation or decision-making responsibilities that notably differs from the formal one. What is for example the true autonomy of schools in an officially heavily centralised system such as the French one?

As we refine our model, we will undoubtedly face increasing difficulties in striving for comprehensiveness and comparability. We will also face some of the many policy issues raised by the use of indicators as monitoring instruments: where does equity fit in? How can we relate differences in school performance to differences in their environment or resources? How does our model relate to the debate on quality and/or relevance of education? Which variables can be seen to affect teaching quality, and how is it to be defined anyway? At this stage, these are questions we hardly can answer. Nevertheless they are part of the background that contributes to shaping our reference frame, and we need to confront them.